

Use of the Vitals Package to Evaluate Treatment of Hypertension in Veterans With Diabetes - Highlights from the Healthcare Analysis and Information Group (HAIG) - FY 1999

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Inadequate treatment of hypertension in people with type 2 diabetes results in many cases of preventable stroke, myocardial infarction, end-stage renal disease, visual impairment/blindness, and premature death. Most veterans with diabetes also have hypertension, and good blood pressure control is perhaps the single most important medical intervention in improving their health and prolonging their life (*Practice Matters*, 2000, 5:1). The VA Quality Enhancement Research Initiative for Diabetes (QUERI-DM) has made improved blood pressure control one of the priorities for quality improvement in VHA.

However, assessing blood pressure control for a population of patients, as well as identifying those at risk for poor outcomes or who may not be receiving optimal anti-hypertensive therapy, is not an easy task. One way to collect blood pressure information is to extract data by manual review of patients' medical records, which is the method used by the EPRP. Based on chart abstraction, the percentage of veterans with diabetes achieving a blood pressure of <140/90 showed minimal improvement (40% to 44%) between 1997 and 1999.

A second method to collect blood pressure information is to use data captured electronically, which is now possible in the VA through the "Vitals Package."

As part of its FY99 diabetes data collection effort, the VA Healthcare Analysis and Information Group (HAIG), in collaboration with QUERI-DM, updated a previously validated software routine (for collecting pharmacy data) to also obtain the last three associated blood pressures from the Vitals Package for patients receiving insulin, oral hypoglycemic agents or blood glucose monitoring supplies.

Since the Vitals Package was still in the implementation phase at some facilities, the impetus for extracting these data was to explore both the feasibility of collecting and potential uses of the electronic blood pressure information. Following are a few highlights from this exploratory process:

- 138/143 stations contributed blood pressure data on over 280,000 veterans with diabetes. Data from the Vitals Package were extracted for over 50% of patients at 91 stations, and 12 stations provided vitals information on over 90% of their patients.
- At least one BP measurement was available for 189,581 veterans with diabetes and a diagnosis of hypertension (based on a search of inpatient and outpatient ICD9-CM codes). Of these patients, 56% had a last value >139/89 and 27% had a last BP >159/89.

- When linked with pharmacy data, the percentage of patients on 3 or more BP medications varied from 27% for patients with one BP entry >159/89 to 32% for those with 3 BP entries >159/89.

While there is still much work to be done to verify the accuracy of the information, it appears that the Vitals Package is a feasible source for collecting blood pressure data. These preliminary analyses also appear to suggest, as shown by others, that blood pressure needs to be more aggressively treated by providers, and that for many individuals 3 or 4 medications may be necessary to lower pressure even to 140/90. Blood pressure will again be included as part of the FY2000 Diabetes data collection effort, which will begin in January, 2001.

Healthcare Analysis and Information Group (HAIG)

The HAIG (formally the National Center for Cost Containment) has been tracking diabetes in the VHA since 1994. For more information about the HAIG, visit their website at <http://vaww.va.gov/haig/>

Visit our website <http://www.hsrd.ann-arbor.med.va.gov/queri-dm/queri-dm.htm>

Findings from the Ambulatory Care Quality Improvement Project (ACQUIP)

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Over the past 20 years the VA has markedly increased outpatient clinic visits while decreasing the number of hospital beds and average length of stay. Currently, most VA health care is delivered in outpatient settings; thus, research on the quality of outpatient care is a high priority. In 1996 the VA funded a randomized clinical trial, the Ambulatory Care Quality Improvement Project (ACQUIP), to determine whether quality and outcomes of health care improve when primary care providers have access to regular assessments of their patients' health and function, and clinical and laboratory data. ACQUIP focused on six chronic conditions treated in primary care clinics: hypertension, diabetes, COPD, symptomatic coronary disease, depression and problem drinking. To conduct the study, Principal Investigator Stephan Fihn, MD, MPH, worked with experts to develop and validate disease specific questionnaires. The seven study sites were: Birmingham AL, Little Rock, AR, Richmond, VA, San Francisco, CA, Seattle, WA, West LA, CA, White River Junction, VT.

At each facility, general internal medicine practitioners delivering outpatient care were grouped into 'firms,' each of which had assigned panels of patients. At each site, one firm was randomized to the intervention group and one to the control group. In the intervention group, individual patients' health information was provided to primary care providers in an attractive graphic format prior to each visit. Intervention providers also received education on the six conditions and personalized feedback about trends in their patients' health status and satisfaction. They could compare their performance to the clinic as a whole. Providers in the control firms practiced without this special feedback or education.

Veterans were eligible to participate in the study if they had made at least one general internal medicine clinic visit in the prior year. They also needed to return a health check list specifying which of the six chronic conditions they had and information on health status, and satisfaction. Shortly thereafter, patients received disease specific questionnaires for each of the six chronic conditions they reported. Questionnaires for each disease were submitted at regular intervals. The diabetes questionnaire, developed by Gayle Reiber, MPH, PhD, ascertained diabetes history, symptoms, complications, patient education needs, self-care activities and diabetes burden.

Between November, 1996 and July 1997, of the 22,645 patients at seven sites who returned their health check, 23% reported a diagnosis of diabetes and of these, 86% returned at least one diabetes questionnaire. Patient characteristics are shown in Table 1.

Table 1 - Characteristics of Patients with Diabetes

Variable	Findings
Average age, years	65
Diabetes type, %	
Type 1	5
Type 2, borderline or unsure	95
Ethnic background, %	
African American	20.0
Hispanic	2.2
Asian Pacific	1.6
Native American	0.4
Caucasian	72.7
Other	3.1
Married, %	63
Years receiving VA care, %	
< 5	31
≥ 5	69
Receiving care outside VA, %	33
Employed full or part time, %	16
Retired, %	55
Disabled, %	43
Annual income, %	
<\$10,000	27.6
\$10,000-19,999	39.4
\$20,000-39,000	26.3
\$40,000+	6.7

The average age of the 4,917 participating veterans with diabetes was 65 years, and 33% received both VA care and health care outside the VA.

Education on self-management skills was of high interest to veterans (Table 2).

Table 2 - Diabetes Education Needs

	Veterans reports being taught...	
	Nothing/some; want more education	Enough
When to call a health care provider if you are not feeling well, %	45.0	55.0
Whom to call if you have an urgent diabetes problem, %	47.7	52.3
How to follow a meal plan, %	36.3	63.7
How to use weight control to help manage your diabetes, %	40.1	59.9
Checking your feet regularly, %	40.0	60.0
How to choose proper shoes, %	49.1	50.9
Long term problems that diabetes may cause, %	39.5	60.5

Veterans identified diabetes education topics on which they knew nothing or a little, or felt they had enough education. Approximately 45% of veterans did not know when to call a health care provider if they were not feeling well and nearly half did not know whom to call with an urgent diabetes problem. Between 36-40% of veterans identified a need for more information on meal plans and weight control. Foot care and foot wear were education was identified as an educational need by 40% and 49.1% of veterans respectively. And finally, about 40% of patients wanted to know more about long term problems that diabetes may cause. Inclusion of these content areas in future diabetes education programs appears warranted.

**A Diabetes Education Program -
An example from the John D. Dingell VAMC in Detroit**
Martin Bermann, DO & Debbie Caplan, MS, RN

The National Standards for Diabetes Self-management Education are designed to help define quality diabetes education across a variety of settings. The American Diabetes Association (ADA) issues an Education Recognition Certificate to eligible diabetes education programs that apply and are able to demonstrate that they meet the National Standards. ADA recognition has been obtained by diabetes education programs at several VAMCs nationwide, although it is important to note that there are also many high quality education programs in the VA that are not part of the Recognition program. Following is a summary of some of the National Standards on an ADA recognized program (For a complete description of the Standards, go to <http://journal.diabetes.org/FullText/DiabetesCare/2000-05ft/page682.htm>, or *Diabetes Care*, 2000, 23(5):682, and the ADA website is at <http://www.diabetes.org/>).

- one sponsoring organization and a qualified coordinator
- an advisory system that annually plans and evaluates the services offered, and reviews the participants' outcomes
- instructors that include at least a registered dietitian (RD) and a registered nurse (RN) who have continuing education and experience in both diabetes and behavioral teaching/counseling skills
- a written curriculum with measurable learning objectives based on the National Standards content areas
- participant education records that document individualized assessment related to the National Standards content areas, education plan with learning and behavioral objectives, interventions, evaluations, and team collaboration

- tracking of participants' behavioral and other outcomes as part of a continuous quality improvement (CQI) process to evaluate the effectiveness of the diabetes education services
- appropriate staffing for the size of the program

The Diabetes Outpatient Education Group Program at the John D. Dingell VAMC in Detroit, Michigan, recognized by the ADA in April, 1999, provides an array of services designed to help the veteran with diabetes achieve control and prevent long-term complications. Patients are referred by their primary physician, and approximately 400 patients are serviced annually. Participants may attend either a day-long class (6-8 hours), or a week long class (2 hours a day). One-on-one instruction is provided when appropriate.

Content of the class focuses on "self management" as defined by the Standards and includes: 1) the pathophysiology of diabetes; 2) drugs and side effects; 3) role of nutrition; 4) acute and chronic complications; 5) training on self-management of blood glucose (SMBG) and other issues. Presentation and materials are designed at the appropriate education level for the population.

Classroom instruction is provided by nurse educators, a dietitian, and a social worker. A physician and a podiatrist serve as guest lecturers. The participants meet in small groups to develop and demonstrate skills with the nurse educators. They also meet individually with the dietitian to develop an individualized meal plan. At completion of instruction, the participant identifies at least one health or quality of life outcome that is personally relevant and meaningful, and selects at least one be-

havioral goal that will help him or her achieve this outcome. Participants have a follow-up appointment three months after completion of the program to assess their blood glucose control, to see how well they are managing their diabetes, and to assess the participants' progress towards achieving their selected behavioral goal(s). Additional instruction is provided if necessary.

Beyond the education program, the John D. Dingell Diabetes Education Program also offers:

- a monthly diabetes support group for participants and their significant others
- quarterly newsletters which are available in the primary care clinics for providers and patients
- a yearly patient workshop to continue to increase their knowledge base
- quality videos and books are available and a list of these materials is provided to all participants
- a yearly education review and glucose meter check
- if education needs are identified, the participant is re-routed back to the education program via a consultation with the nurse educator
- a database using the recommendations from the ADA was designed to help manage the education program and facilitate the data collection component (SEE NEXT PAGE).

If you would like more information or guidance on how to start or improve upon your own diabetes education program, you can contact Martin Bermann, DO, Medical Director at (313) 576-1000 xt 3125, Martin.Bermann@med.va.gov, or Debby Caplan, MS, RN, Coordinator, (313) 576-1000 xt. 4689, Deborah.Caplan@med.va.gov

Free database available for creating and maintaining a diabetes education program

The database used by the Education Program at the John D. Dingell VA is being adapted by QUERI-DM into a user friendly Access format that can be run on most PCs with Microsoft Windows 97 or 2000. This database was designed based on the recommendations of the ADA for Recognition of Diabetes Education Programs and will be available, free of charge, from the QUERI-DM website, (<http://www.hsrd.ann-arbor.med.va.gov/queri-dm/queri-dm.htm>). **This database will be completed by February, 2001, so please check back at that time.** Even if your facility is not interested in obtaining ADA recognition, but would like to start or improve upon an education program, you might find this database very useful.

ADA Recognized Programs in the VA :

The following is a list of diabetes education programs (as of October, 2000) in VAs that are recognized by the American Diabetes Association (ADA). These programs meet the National Standards for excellence in diabetes education. If your program is approved and is not listed here, please call Lyla Kaplan (734) 930-5144.

State	Facility	Program
AR	Little Rock VAMC	Diabetes Education & Management Outpatient Program
CA	San Francisco Medical Center	Outpatient Diabetes Self-Management Education Program
CT	Newington VAMC	VA CT Diabetes Education and Self Management Program
CT	VA Connecticut HCS (West Haven)	VA CT Diabetes Education and Self Management Program
FL	James A. Haley Veterans' Hospital Tampa	Basic Outpatient Education Program: Living with Diabetes
MA	VA Boston HCS (Brockton)	Diabetes Self-Management Outpatient Education Program
MA	VA Boston HCS (West Roxbury)	Diabetes Self-Management Education and Training Program
MI	John D. Dingell VAMC (Detroit)	The Outpatient Diabetes Education Group Program
NC	Durham VAMC	Diabetes Group Education Class
NH	Manchester VAMC	Outpatient Diabetes Education Program
NJ	VA New Jersey HCS (East Orange)	Diabetes Self-Management Education and Training Program
NJ	VA New Jersey HCS (Lyons)	Diabetes Self-Management Education and Training Program
NM	Albuquerque VAMC	Diabetes Patient Education Group Program
NY	Northport VAMC	Diabetes Self-Management and Education Outpt. Program
NY	VA Medical Center Syracuse	Diabetes Patient Education Program
NY	VA Western New York HCS Batavia & Buffalo	Understanding Diabetes Mellitus – The Diabetes Education
PA	Philadelphia VAMC	Outpatient Diabetes Education Program
PA	Wilkes-Barre VAMC	Outpatient Diabetes Education Program
RI	Providence VAMC	The Diabetes Outpatient Self-Management Education Prog.
TN	Memphis VAMC	Memphis VA Outpatient Diabetes Education Program
TX	North Texas VA HCS	Diabetes: A Guide to Self-Management Through Education
TX	South Texas VA HCS - Audie L Murphy	Winning with Diabetes Self-Management Ed. Program
TX	South Texas VA HCS – Frank Tejeda Outpatient Clinic	Winning with Diabetes Self-Management Ed. Program
TX	South Texas VA HCS (Kerrville)	Winning with Diabetes Self-Management Ed. Program
VA	Hampton VAMC	Diabetes Education Program
VA	Salem VAMC	Diabetes Outpatient Education Program
VA	Hunter Holmes McGuire VAMC (Richmond)	McGuire Research Institute Diabetes Patient Ed. Program
VT	VAMROC (White River Junction)	The Outpatient Diabetes Education Program
WI	VAMC Milwaukee	Diabetes Education Program: Living with Diabetes
WI	William S Middleton Memorial VAMC	Diabetes Education Program
WV	Louis A. Johnson VAMC (Clarksburg)	Outpatient Diabetes Self-Management Education Program

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